

Laucks⁸⁰_{years}

Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry Microbiology and Technical Services

CLIENT: Alaskan Copper Works
P.O. Box 3546
Seattle, WA 98124
ATTN: Raphael

LABORATORY NO. 12414

DATE: Oct. 18, 1988

PO #M7297

REPORT ON: WASTE

SAMPLE

IDENTIFICATION: Submitted 10/4/88 and identified as shown:

- 1) 9-1-3200
- 2) 9-6-3200
- 3) 9-8-3200
- 4) 9-13-3200
- 5) 9-15-3200
- 6) 9-27-3200
- 7) 9-29-3200
- 8) 9-20-3200
- 9) 9-22-3200
- 10) 9-28-3200
- 11) 10-4-3200

parts per million (mg/L)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Copper	0.31	0.73	0.64	0.35	0.33	0.31
Nickel	0.54	1.6	1.5	0.81	0.71	0.44
Zinc	0.092	0.10	0.10	0.088	0.087	0.083
Chromium	0.68	2.0	1.9	1.3	1.0	0.66



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AKC-0015302

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	<u>parts per million (mg/L)</u>				<u>Lab</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>Blank</u>
Copper	0.51	1.5	0.67	0.16	<0.002
Nickel	0.46	2.7	1.4	0.70	<0.01
Zinc	0.094	0.12	0.10	0.045	<0.002
Chromium	0.73	2.8	1.8	0.81	<0.005

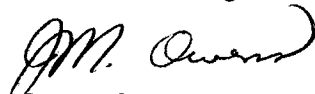
	<u>11</u>
Specific Gravity @ 25°C	1.172
Total Acidity, calculated as % HNO ₃ (methyl orange end point)	5.2

Key

< = less than

Respectfully submitted,

Laucks Testing Laboratories, Inc.


J. M. Owens

JMO:veg



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APPENDIX

Matrix Spike/Matrix Spike Duplicate Report

		<u>parts per million (mg/L)</u>				<u>mg/L</u>				
<u>Sample</u>	<u>Analyte</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>MS Result</u>	<u>% Rec</u>	<u>MSD Result</u>	<u>% Rec</u>	<u>RPD</u>	<u>QC LIMITS</u>	
									<u>RPD</u>	<u>REC</u>
1	Chromium	0.10	0.68	0.80	120.	0.78	100.	18.*	6	67-127
1	Zinc	0.10	0.092	0.18	83.	0.17	78.	6.	6.	64-127
1	Copper	0.10	0.31	0.39	82.	0.40	88.	7.	7	65-122
1	Nickel	0.20	0.54	0.73	98.	0.72	93.	5.	5	66-125

* Samples are spiked prior to preparation and analysis at a level deemed to be generally appropriate to the average sample processed in the laboratory. In this case, the level of analyte already present in the sample was large enough to make an accurate determination of spike recovery impossible.

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Rec = Recovery

RPD = Relative Percent Difference



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